CONTENTS OF *AQUACULTURE*, VOLUME 64

VOL. 64 NO. 1 — 15 JUNE 1987

Diseases, Parasites and Predators

Experimental transmission of *Saprolegnia* and *Achlya* to fish
R.N. Singhal (Calgary, Alta., Canada), S. Jeet (Kurukshetra, India) and R.W. Davies (Calgary, Alta., Canada) 1

Economics and Marketing

Evaluation de l'intérêt économique de la culture d'éponges commerciales sur les côtes méditerranéennes françaises (Economic appraisal of commercial sponge culture along the French Mediterranean coasts)
B. Verdenal and M. Verdenal (Marseille, France) 9

Husbandry and Management

Energy value of biomass within benthic algae of milkfish ponds
S.-C. Fong and H.-P. Ju (Kaohsiung, Taiwan) 31

Substrate specificity of heterotrophic bacteria in the water and sediment of a carp culture pond
H. Sugita, K. Oshima, T. Fushino and Y. Deguchi (Tokyo, Japan) 39

Physiology and Endocrinology

Feeding behaviour in adult rainbow trout and Atlantic salmon parr, elicited by chemical fractions and mixtures of compounds identified in shrimp extract
K.J. Mearns, O.F. Ellingsen, K.B. Døving and S. Helmer (Oslo, Norway) 47

Gametogenic patterns in populations of Pacific oyster, *Crassostrea gigas*, in Northland, New Zealand
P. Dinamani (Wellington, New Zealand) 65

Egg development and lifecycle timing in the noble crayfish (*Astacus astacus*)
D.O. Hessen, T. Taugbøl, E. Fjeld and J. Skurdal (Oslo, Norway) 77

Book Reviews

Fishery development experiences 83

Scientific basis of inland fisheries management 84

Announcement 84

VOL. 64 NO. 2 — 1 JULY 1987

Genetics and Breeding

Genetic variation in freshwater survival and growth of chinook salmon (*Oncorhynchus tshawytscha*)
R.E. Withler, W.C. Clarke, B.E. Riddell and H. Kreiberg (Nanaimo, B.C., Canada) 85

Triploidization of brown trout (*Salmo trutta*) by heat shocks
K. Arai (Iwate, Japan) and N.P. Wilkins (Galway, Ireland) 97

Husbandry and Management

Effects of aeration period on the productivity and agar quality of *Gracilaria* sp.
J.M. Guerin (Rennes, France) and K.T. Bird (Ft Pierce, FL, U.S.A.) 105

The effects of water hardness on the hatching and viability of silver carp (*Hypophthalmichthys molitrix*) eggs
A.C. Gonzal, E.V. Aralar and J.Ma.F. Pavico (Binangonan, The Philippines) 111
Environmental parameters controlling growth of *Ostrea edulis* L. and *Pecten maximus* L. in suspended culture
J.H. Wilson (Carna, Ireland) 119

Nutrition
Penaeid shrimp hatchery trials using microencapsulated diets
D.A. Jones, K. Kurmaly and A. Arshard (Menai Bridge, Great Britain) 133

Physiology and Endocrinology
Seasonal changes in the quality of rainbow trout (*Salmo gairdneri*) semen: effect of a delay in stripping on spermatocrit, motility, volume and seminal plasma constituents
K.R. Munkittrick (Waterloo, Ont., Canada) and R.D. Moccia (Guelph, Ont., Canada) 147
Early survival rates and subsequent morphological abnormalities in landlocked, anadromous and hybrid (landlocked × anadromous) diploid and triploid Atlantic salmon
A.M. Sutterlin (Nepean, Ont., Canada), J. Holder (St. Albans, Nfld., Canada) and T.J. Benfey (West Vancouver, B.C., Canada) 157

VOL. 64 NO. 3 15 JULY 1987

Diseases, Parasites and Predators
Notes on diseases and epibionts of *Cherax quadricarinatus* and *C. tenuimanus* (Decapoda:Parastacidae)
B. Herbert (Deception Bay, Qld., Australia) 165

Husbandry and Management
Responses of intermolt *Penaeus indicus* to large fluctuations in environmental salinity
F.D. Parado-Estepa, R.P. Ferraris, J.M. Ladja and E.G. de Jesus (Iloilo, The Philippines) 175

Nutrition
Metamorphosis of larvae of *Crassostrea virginica* fed microencapsulated diets
F.-L.E. Chu, K.L. Webb, D.A. Hepworth and B.B. Casey (Gloucester Point, VA, U.S.A.) 185
Influence of water temperature on food intake, food efficiency and gross composition of juvenile sea bass, *Dicentrarchus labrax*
F. Hidalgo, E. Alliot and H. Thebault (Marseille, France) 199
Methionine- and cystine-supplemented diets for juvenile sea bass (*Dicentrarchus labrax*)
F. Hidalgo, E. Alliot and H. Thebault (Marseille, France) 209

Physiology and Endocrinology
Motoricity of Atlantic salmon embryos (*Salmo salar* L.) at different temperatures
M.B. Klinkhardt (Rostock, German Democratic Republic), A.A. Straganov and D.A. Pavlov (Moscow, U.S.S.R.) 219

Short Communications
Resistance of *Ostrea edulis* to *Bonamia ostreae* infection
R.A. Elston, M.L. Kent and M.T. Wilkinson (Sequim, WA, U.S.A.) 237
Cryopreservation of spermatozoa of the barramundi, *Lates calcarifer* (Teleostei: Centropomidae)
L.K.-P. Leung (St. Lucia, Qld., Australia) 243

Technical Paper
Culture of marine microalgae with natural biodigested resources
J. Paniagua-Michel, B.C. Farfan and F. Bückle-Ramirez (Ensenada, Baja California, Mexico) 249

VOL. 64 NO. 4 1 AUGUST 1987

Genetics and Breeding
Variation in early growth and survival of pink salmon (*Oncorhynchus gorbuscha*) families with respect to temperature and transfer to salt water
T.D. Beacham and C.B. Murray (Nanaimo, B.C., Canada) 257

Nutrition
Dietary calcium and phosphorus requirements of *Oreochromis aureus* reared in calcium-free water
E.H. Robinson, D. LaBomascus, P.B. Brown and T.L. Linton (College Station, TX, U.S.A.) 267
Influence of feeding rate and diet form on growth and survival of Nile tilapia (*Oreochromis niloticus*) fry
C.B. Santiago, M.B. Aldaba and O.S. Reyes (Binangonan, The Philippines) 277
The protein sparing effect of carbohydrates in the diet of eels (*Anguilla anguilla*)
G. Degani (Kiryat Shmona, Israel) and S. Viola (Ashrate, Israel) 283
Growth and body composition of juvenile *Colossoma macropomum* Cuvier 1818 (Characoidei) feeding on artificial diets
R. Eckmann (Constance, Federal Republic of Germany) 293
A dynamic simulation model for growth of the African catfish, *Clarias gariepinus* (Burchell 1822). IV. The effect of feed formulation on growth and feed utilization
M.A.M. Machiels (Wageningen, The Netherlands) 305

Physiology and Endocrinology
Effets immédiats d'une augmentation rapide de temperature sur certains paramètres sanguins du "loup" *Dicentrarchus labrax* (Linne, 1758) (Immediate effects of a rapid temperature increase on some blood parameters of European sea bass *Dicentrarchus labrax* (Linne, 1758))
N. Hadj Kacem (Palavas-les-Flots, France), J.F. Aldrin (Brest, France) and B. Romestand (Montpellier, France) 325
The effect of high salt diet on the direct transfer of *Oreochromis mossambicus, O. spilurus* and *O. aureus/O. niloticus* hybrids to sea water
M.M. Al-Amoudi (Jeddah, Saudi Arabia) 333
Observations related to the homing instinct of Atlantic salmon (*Salmo salar* L.)
B. Johannesson (Reykjavik, Iceland) 339

Technical Paper
24-Hour molting pattern of the red swamp crawfish (*Procambarus clarkii*)
D.D. Culley and L. Duobinis-Gray (Baton Rouge, LA, U.S.A.) 343

Author Index 347

Contents of *Aquaculture*, volume 64 350